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IN THIS ISSUE

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Electronic medical records: A necessity, or costly nightmare? Providers weigh in

You don't have an electronic medical record (EMR) system implemented yet, and now there's talk of patients bringing you their personal electronic health records. Should you scramble to implement an EMR system, or continue to wait it out?

On the hospital side, larger facilities are more likely to have implemented EMRs than smaller ones. In one survey by the American Hospital Association, 23% of respondents with 500 beds or more had a fully implemented EMR; only 3% of hospitals with fewer than 50 beds had done so.[1]

According to a survey of ambulatory surgery centers completed last spring,[2] most ambulatory surgery centers (ASCs) are opting to wait. The survey by Wolters Kluwer Health, Conshohocken, PA, showed that 82% of ASCs don't use an EMR. ProVation Medical, which is part of Wolters Kluwer Health, provides electronic provider documentation systems.

Melodee Moncrief, BSN, RN, CASC, administrator of Big Creek Surgery Center, in Middleburg Heights, OH, said, "We need to get ahead of that game and gain the advantage over our competition in the ASC. We really need to put the EMRs in." Moncrief spoke on this topic at this year's annual meeting of the ASC Association.

In referring to the Wolters Kluwer Health research, **Kenny Bozorgi**, MD, CASC, chief operating officer at Magna Health Systems in Chicago, said, "Interesting, in that study, the question was asked of leaders in surgery centers: 'What are your concerns?' About 49% said they were concerned about inefficiency and loss of revenue [during the EMR implementation process]," Bozorgi said. The ASC managers also were concerned

Report on *SDS* Salary Survey moves to January

The *Same-Day Surgery* Salary Survey Report will run in the January 2009 issue. Don't miss out on this valuable resource for determining what others in your field are being paid and what your salary should be!

about lack of assistance and trained personnel in implementing the EMR and the lack of interface with existing systems. They also were concerned about whether the EMRs are geared to the outpatient surgical setting. Those concerns are valid and point to reasons ASC managers should closely examine the switch to EMRs to determine if it is right for their ASC, said Bozorgi, who is a candidate for a master's degree in medical information from Northwestern University in Evanston, IL.

The issues that EMRs can address are efficiency and patient care, said **Mary Griskewicz**, MS, FHIMSS, senior director of ambulatory information systems, Healthcare Information and Management Systems Society (HIMSS). "The use of an EMR system can assist the center with several processes, improver workflow for scheduling, case documentation, [and] sharing of clinical information such as lab results," she said.

Need another reason? The federal government has called for health care facilities to have EMRs available by 2014. "I think the implication for surgery centers is similar to implications for other broad-scope health care changes," Bozorgi said. "ASCs will have to follow suit."

New federal legislation has been introduced that would require the government to create standards for an interoperative health information technology system. The Health-e Information Technology Act of 2008 (HR 6898) was introduced by Rep. Pete Stark. It would offer financial incentives through Medicare to providers that adopt and use electronic medical records systems that meet the standards.

However, not everyone is urging immediate adoption. Bozorgi said, "In the best of all possible worlds, EMRs would allow for safer, more effective, more efficient, more patient-centered care." However, the verdict still is out about whether EMRs help ASCs and other health care facilities achieve those goals, he maintains. "The final definitive studies of the benefits of EMRs are not conclusive yet," he said.

While providers still debate the need for EMRs, interest is growing, Moncrief said. One distinct advantage is reduction in paper costs, she said. Those costs include storage, copying, faxing, and

EXECUTIVE SUMMARY

Consider implementing electronic medical records (EMRs) to improve efficiency, revenue, and patient care.

- Look for a system that can assist with scheduling, integrate with laboratory results, and coordinate care between practices. Also look for one that can provide just-in-time information to assist with clinical decisions and reporting.
- Have hands-on demonstration of many systems, and include many clinical and nonclinical staff.
- Look at a vendor's experience in the market, examine its financial health, and ask about its long-term goals.
- Have dedicated staff and "superusers" to assist with training and support. Ensure you have an adequate infrastructure, such as an uninterrupted power supply.

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lost or missing files, "That all creates staff time," Moncrief added.

From its opening day in 2006, Moncrief's center used an EMR manufactured by Amkai in Waterbury, CT (www.amkai.com).

"Our paper cost averages $3.66 per case, and that's including our support and hardware, annually, which is a great savings for us," she said.

At her center, 90% of cases (all except pain cases) are handled with an EMR. The only other piece of paper is the consent form. EMRs offer a competitive advantage in hiring, because staff from other facilities can become accustomed to being paperless and unwilling to go back, Moncrief explained. "Staff satisfaction creates retention," she said.

Moncrief pointed to surgery center staff who work PRN in other facilities that use paper documentation but return to centers that have EMRs. "They say, 'I don't want to even work there anymore. It's all paper. I'm not used to that. It takes too long to do the charting,'" she said.

Quality improvement is easier, she said. "Chart reviews and peer reviews are made very simple by having an EMR."

Also, EMRs can reduce liability because the system doesn't allow "pre-charting." Also, it provides an audit trail and can offer failsafes for medication administration, Moncrief said. "It works nice if you're giving them [ketorolac trometamol] and they're already on the aspirin," she said. "A big, blinking light comes up and says, 'no. no. no.'"

The future is changing, "and we need to keep our ASCs ahead of the game," Moncrief said. Take the time to research and implement an EMR, she advised. "Stay focused, and try to move ahead."

References

1. American Hospital Association. *Continued Progress: Hospital Use of Information Technology.* Chicago: American Hospital Association; 2007. Accessed at www.aha.org/aha/content/2007/pdf/070227-continuedprogress.pdf.
2. Provation Medical Ambulatory Surgery Center Administrators — Report of Research Findings. Edwardsville, IL: Renaissance Research; 2008. ■

Steps to implementing an electronic record

So if you've decided to implement an electronic medical record (EMR), what is your first step? Do your homework, said **Kenny Bozorgi**, MD, CASC, chief operating officer, Magna Health Systems, Chicago. He also is a candidate for a master's degree in medical information from Northwestern University in Evanston, IL.

Find out what EMRs exist that are specific to your type of facility, sources suggests. **(See resource box, below.) Melodee Moncrief**, BSN, RN, CASC, administrator of Big Creek Surgery Center in Middleburg Heights, OH, spoke on this topic at this year's meeting of the Ambulatory Surgery Center (ASC) Association. If you're in an ASC, don't purchase an EMR built for hospitals, Moncrief advised. "There's a big difference there, because then it's not actually working for your needs," she said. Also, there might be a dramatic difference in costs, and you won't want to pay for features that you don't need, sources say.

An EMR needs to fit into a clinical pathway system that allows you to take info gathered at intake and add it into the record, says **Mark Mayo**, corporate director of ASC operations for Magna Health Systems in Chicago and executive director of the Surgery Center Association of Illinois. Also, the EMR should ask you several questions that may affect decisions on the course of care or offer additional steps to take, he says. "For example, if a patient has a history of deep vein thrombosis, what steps should be taken such as compression stockings, etc., to avoid a clot?" he asks.

RESOURCES

For resources on electronic medical records (EMRs), contact:

- **The American Health Information Management Association.** Web: www.ahima.org. Under "HIM resources," see "vendor and exhibitor directories" and other resources.
- **The Certification Commission for Healthcare Information Technology.** Certifies EMR systems and will certify personal record sites in the future. Web: www.cchit.org.
- **Department of Health and Human Services.** Web: www.hhs.gov/healthit. Click on "resources" to access reports, fact sheets, and other materials.
- **The Healthcare Information and Management Systems Society.** Produces a free newsletter titled "Healthcare IT News." Go to www.himss.org/ASP/PublicationsHome.asp. Under "HIMSS Insider," click on "subscribe to Healthcare IT News online."
- **KLAS.** Evaluates, certifies, and compares EMRs and offers a free vendor directory. Web: www.klasresearch.com/vendordirectory.

You also want an EMR that is as flexible as possible so it can be designed and customized to your needs, Bozorgi said. For example, you might want a medication reconciliation process that allows you to push a button at the end of the day and print a reconciliation sheet, he said. It also might automatically fax that information to surgeons and referring physicians, Bozorgi said. Also look for the ability to automatically generate benchmarking data, state reports, and association reports, he said.

Find an EMR that is integrated with your management system, sources suggest. **Mary Griskewicz**, MS, FHIMSS, senior director of ambulatory information systems, Healthcare Information and Management Systems Society (HIMSS), said to look for these features:

- ability to assist with or be easily integrated with scheduling;
- integration with laboratory results and care coordination between specialty and primary care practices;
- just-in-time information to assist with clinical decisions and reporting.

Finally, have hands-on demonstration of as many electronic medical record solutions as you possibly can, and include as many clinical and nonclinical staff as possible, said Bozorgi. "Basically, take as much time as you need to explore options before the final decision," he said.

Look for a vendor that has been around for a long time, examine its financial health, and ask about its long-term goals, Bozorgi advised. "Find out if they're planning to get bought out in the next year or two, and you'll deal with a whole new organization, or stay independent," he said. "There's pros and cons to both approaches."

You need dedicated staff and "superusers" to assist with the training and support,

Griskewicz advised. "The implementation of an EMR system is like building a house: You must have a general contractor, or in this case a project manager, capable of assisting to plan, design, test, and implement to the requirements of the center," she said.

Additional infrastructure needs to be in place before you implement an EMR, Bozorgi advised. "That infrastructure includes things like uninterrupted power supplies, which can give you many hours of protection against widespread power loss," he said. "That would allow you to print medical records."

You need refined data backup capability and, ideally, the option of accessing your records remotely in the event of an evacuation, for example, Bozorgi said. "At the end of the day, a paper backup plan, well thought out and rehearsed, should always be in place," he said. ■

3 lessons learned about adopting EMRs

When you adopt electronic medical records (EMRs), the biggest barrier will be resistance to change, said **Melodee Moncrief**, BSN, RN, CASC, administrator at Big Creek Surgery Center in Middleburg Heights, OH. Moncrief spoke on EMRs at this year's meeting of the Ambulatory Surgery Center (ASC) Association.

The lack of management commitment can mean death for your implementation plan, Moncrief said. "If you do not have management support — whether it be your management company, your management team, such as your administrator, your director of nursing, your BOM [business office manager] — if you don't have their support in the implementation of doing an EMR, don't waste your time," she said. "You absolutely have to be committed to the program, because it is change."

How should managers convey their commitment? **Kenny Bozorgi**, MD, CASC, chief operating officer, Magna Health Systems, Chicago, said, "It includes some personal communication from the highest level as to the importance of the project as well as education of staff on the potential benefits and goals of organization as to why conversion to electronic medical record is important to the organization," he said.

Consider these other lessons by Moncrief learned as she implemented EMRs at her new facility:

- **Lesson 1: Buy the equipment that you need.**

Ensure you have a good hardware system, Moncrief said, "because the software is only going to work as good your hardware." At her system, their wireless system wasn't strong enough for their flowcharts, which created slow documentation, she said. "The hourglass just kept going around and around, and the nurses were getting very frustrated," Moncrief said. Boosters were added. "Now it works great, and it's fast," she reported.

Put enough tablets or carts (computers on wheels) for your facility and place them at the bedside so that caregivers have immediate access to the EMR, Moncrief said.

"My rule of thumb is one nurse for three patients equals one cart, approximately," she said. For a

postoperative care unit [PACU] that's not handling a pediatric case, one nurse equals one cart, Moncrief said. "If you have nurses waiting in line to chart your patients, it's not going to work because then nurses get frustrated and they don't want to use it."

• Lesson 2: There's no halfway approach.

Don't start with only part of record managed through an EMR, Moncrief advised.

"Do it 100%," she said. "There's no partial implementation because that gives people excuses not to use the system."

• Lesson 3: Your staff need full concentration to learn the software.

If you center already is open, pay users overtime to train on weekends or evenings, "because you really need to be 100% focused on learning the EMR," Moncrief advises.

Don't have staff try to learn electronic documentation as they're caring for patients, she said. "You're going to miss something that's very important and, here again, you're going to give people an excuse not to use the system," Moncrief said. ■

3 Key Hand Hygiene Procedures

- **Hand washing.** Wash hands with soap and water, including contact with soap for at least 15 seconds, covering all surfaces (palm, back of hand, fingers, fingertips, and fingernails); rub with friction. Turn off water without recontaminating hands. If the faucet is hand-operated, use paper towel to turn off the faucet; if the faucet is automatic, credit for compliance is given for correct performance. Dry hands with fresh paper towel.
- **Using alcohol-based hand hygiene product (rub, gel, or foam).** Use enough to cover all surfaces (palm, back of hand, fingers, fingertips, and fingernails). Rub until dry (at least 15 seconds), which ensures sufficient volume has been applied.
- **Removing gloves using correct technique (so as not to contaminate the hands with a contaminated glove surface).**

Source: The Institute of Healthcare Improvement. *How-To Guide: Improving Hand Hygiene.* Accessed at www.shea-online.org/Assets/files/IHI_Hand_Hygiene.pdf.

Monitor hand hygiene to reach 90% compliance

Other approach still needed to reduce infections

As concern grows over antibiotic-resistant organisms, health care workers never have been under greater scrutiny for their compliance with hand hygiene.

It is not an infectious disease cure-all. In fact, one recent study failed to show a decrease in infection rates with a rise in hand hygiene,[1] but programs that use periodic monitoring and feedback to attain very high rates of compliance — 80% or higher — are reporting that hand hygiene can have a significant impact on the spread of hospital-based infections.

"I think it's extremely important, perhaps the most important thing we do in infection control," says **Don Goldmann**, MD, senior vice president of the Institute for Healthcare Improvement (IHI) in Cambridge and professor of pediatrics at Harvard Medical School.

Surveyors from The Joint Commission and the Accreditation Association of Ambulatory Health Care (AAAHC) observe compliance with hand hygiene during surveys.

Hand hygiene has long been a goal of IHI, which provides a free toolkit for monitoring compliance. **(See story about toolkit, p. 118.)** The alcohol-based gels have enabled hospitals to reach high levels of compliance that were not possible with the abrasive and more time-consuming soap-and-water method.

But managers must do more than just install gel dispensers. They must create a hand hygiene program that includes monitoring and feedback and maintains dispensers that are conveniently located and frequently refilled, Goldmann says. "You can't expect [hand hygiene compliance] to happen automatically if you don't put the systems in place to support it," he says.

Last year, when administrators at Massachusetts General Hospital in Boston were preparing to issue bonuses to employees, they decided to take an opportunity to emphasize the importance of hand hygiene. Half of the bonus was dependent on the hospital reaching its goal of 90% compliance with hand hygiene before and after patient contact. Even the administrators would not receive the bonus if the staff failed at that mission.

It took a few months, but the hospital met its goal, and employees received their bonuses. Meanwhile, they understood that administrators considered hand hygiene to be an important component of quality patient care, says **David Hooper**, MD, chief of the infection control unit at Mass General. "It also set up the concept that we're all in this together," he says.

This was not a one-time campaign. The hospital has used other incentives, as well, such a pizza parties for units that achieved high rates of compliance, and it provides continual education and accountability for hand hygiene.

The infection control department devotes 1½ FTE employees to coordinate the hand hygiene program, including monitoring through observations. They conduct about 2,000 observations per quarter, rotating on different floors at different times of day. Units receive feedback quarterly.

About eight years ago, the hospital had hand hygiene compliance rates of about 40%, which was similar to the national average. But a persistent focus on the issue not only raised the compliance, but created a sustainable program, says Hooper. "It's difficult to change behavior immediately, but over several years, our hand hygiene rates have gone up steadily and consistently and stayed up," he says. "Our rates of hospital-acquired cases of MRSA [methicillin-resistant S*taphylococcus aureus]* have gone down 2.9-fold in a steady downward trend. Before that, we were seeing a pretty steady upward trend."

Hand hygiene isn't the only component of the infection control effort. The hospital also has stepped up its cleaning of patient rooms, he says. "It's really back to basics, [like] your mother told you. Wash your hands and clean your room," he says. "The concepts are very simple and, if done well, they can be very effective."

Improving hand hygiene will not necessarily bring immediate results related to hospital-acquired infections. But alcohol-based gels are readily accepted by health care workers and can become a part of the health care routine. Those were conclusions of a study at the University of Nebraska in Omaha compared two intensive care units — one that used alcohol-based gel and one without. With the gel, compliance with hand hygiene doubled from 35% to 70%. After a year, the gel was removed from one ICU and introduced into the other. The hand hygiene compliance dropped in the first ICU. The study was conducted from 2001 to 2003, when alcohol-based gels became widely available and the Centers for Disease Control and Prevention recommended their use.

"They responded by falling back to the baseline hand hygiene rate," says lead author **Mark Rupp**, MD, professor of infectious disease and director of the Department of Healthcare Epidemiology at the University of Nebraska Medical Center. "They sort of objected with their hands by dropping their hand hygiene compliance [when gels were removed]."

Health care workers using the hand gel had less microbial carriage on their hands. However, longer nails and wearing rings were associated with more microbes, Rupp says. "We found when the nails got anything longer than 2 mm, we saw increased carriage of microbes," he says. "If you hold your hand palm toward your face and you can see any nail above your fingers, they're probably too long.

Rupp and his colleagues were disappointed that they didn't find a reduction in hospital-acquired infections such as MRSA or *Clostridium difficile*. The infection rates were low before the study began, which would make it more difficult to detect differences, he says.

There are other possible reasons that the study didn't find that gels had an impact on infection rates, Rupp says. "The compliance was 70%; it wasn't 90% or 100%," he says. "There may be a threshold you have to cross over for hand hygiene to have a demonstrable effect, and we didn't cross that threshold."

Yet Rupp says there's still an important lesson: Managers must use a multipronged effort to reduce infections. "We may have to combine hand hygiene with other infection control practices in order to have an effect," he says.

Meanwhile, the medical center is developing an ongoing monitoring program for hand hygiene compliance. Employees on each ward are trained to conduct hand hygiene observations and record the information in a web-based data entry system. Data on compliance are available in monthly reports. "By having these observers and rapid feedback to the wards, we've been able to increase hand hygiene compliance up to the 80% to 90% range," Rupp says.

Reference

1. Rupp ME, Fitzgerald T, Puumala S, et al. Prospective, controlled, crossover trial of alcohol-based hand gel in critical care units. *Infect Control Hosp Epidemiol* 2008; 29:8-15. ■

Ways to measure hand hygiene compliance

The Institute of Healthcare Improvement's (IHI) free *How-to Guide: Improving Hand Hygiene*, includes monitoring checklists. To monitor hand hygiene compliance, IHI suggests the following measures. **(See additional step on p. 119.)**

1. The percentage of caregivers who answer

all five questions correctly on a standardized hand hygiene knowledge assessment survey.

Consider selecting a random sample of 10 clinical providers from diverse disciplines each month (or at other intervals specified by the hospital) to answer a five-question survey along with a competency check. (A sample survey is available in Appendix One of the resource at www.shea-online.org/Assets/files/IHI_Hand_Hygiene.pdf.)

An alternative strategy is to assess knowledge using an intranet-based system. Facilities could require employees to take an annual online test for or could conduct more frequent sampling.

An alternative strategy is to assess knowledge by using an intranet-based system. Facilities could require employees to take an annual online test or could conduct more frequent sampling.

2. The percentage of caregivers who perform all three key hand hygiene procedures correctly.

Randomly select a sample of 10 clinical providers from diverse disciplines each month (or at other intervals specified by the facility) and observe them to determine if they perform the three key hand hygiene procedures correctly: hand washing, alcohol-based hand rub, and gloves. **(See more on three steps, p. 117.)** This method has the strength of direct evaluation and feedback, but is time-consuming. It also provides an opportunity to ensure that providers are not wearing artificial nails or nail extenders and have their nails trimmed to less than ¼ inch.

Alternatively, competence can be assessed by monitoring hand hygiene practices during actual work. This has the advantage of being unobtrusive and integrated with other monitoring activities, but precludes direct feedback and adds complexity to the monitoring process.

3. The percentage of bed spaces at which there are clean gloves in appropriate sizes *and* dispensers (wall-mounted or freestanding bottles) for alcohol-based hand rub/gel/foam that contain product, are functional, and dispense an appropriate volume of product.

Make direct observations monthly (or at other intervals specified by the facility) on the same nursing units where Measures 1 and 2 are monitored. Alternatively, availability can be assessed periodically as part of routine multidisciplinary rounds.

Dispenser of alcohol-based product must be present, readily accessible at the point of care, not empty, functional, and capable of delivering the appropriate volume of product. If hand/pocket bottles are used, an adequate supply must be readily available and accessible on the ward.

At least two sizes of gloves should be available and readily accessible at the point of care.

The guide was developed with the Centers for Disease Control and Prevention, the Society of Healthcare Epidemiology of America, and the Association for Professionals in Infection Control and Epidemiology. *(Editor's note: To access the guide, go to www.shea-online.org/Assets/files/IHI_Hand_Hygiene.pdf .)* ■

Last hand hygiene step: Who complies with all?

According to *How-to Guide: Improving Hand Hygiene*, the Institute of Healthcare Improvement (IHI) says you should measure the percentage of patient encounters in which there is compliance by health care workers with all components of appropriate hand hygiene and glove practices.

Compliance is monitored with direct observation by a trained observer using a standardized procedure and form. Independent observers are strongly recommended, preferably individuals who routinely are on the ward for other purposes and are not part of the care team. (This independent monitoring can be reinforced with monitoring by the care team during routine multidisciplinary rounds, which permits immediate assessment and feedback.) Observation periods should be 20-30 minutes (repeated if necessary) so that about 25-30 patient encounters are observed.

The emphasis should be on observing complete encounters so that the proper measure of *complete* compliance with all components of the hand hygiene and glove intervention package can be calculated. Divide the number of encounters in which all components were performed correctly by the number of encounters observed and multiply by 100 to calculate the percentage compliance rate.

Gloves should be worn for all types of contact if the patient is on isolation precautions that require the use of gloves for contact with the patient and the environment, or if there is a unit-based procedure for universal gloving (wearing gloves for contact with all patients and their immediate environment).

The following additional measure also can be used, but it does not replace direct observation of health care worker compliance during patient encounters:

Volume of alcohol-based hand hygiene product

consumed per week (or per month) divided by the number of patient days in the corresponding time period.

Self-reporting by personnel or patients is not a reliable measure of compliance. ■

Same-Day Surgery Manager

Inpatient vs. outpatient: tough questions addressed

By **Stephen W. Earnhart**, MS
CEO
Earnhart & Associates
Austin, TX

I have received so many phone calls and e-mails about the September column on the separation of inpatient and outpatient ORs that I thought a follow-up to some of your questions was necessary. Overall, the response was very favorable and positive.

Question: What do you do about patient registration when inpatient and outpatient ORs are separated?

Answer: The patients are registered via the "surgery center" staff on site and not incorporated into the inpatient registration process.

Question: If you are using a traditional surgery center management information system (MIS) to track your productivity, how are you generating the hospital-required admission or medical record number?

Answer: Admittedly, this proved to be a huge issue that confounded our transition team for a while. We were able, working with the software designer, to add a new field into the software that would allow us to generate or mimic the hospital medical record number. The other issue that we faced was sharing the demographic information that the hospital has on file and to be recognized in the hospital system. For that, we had to write an interface that served as a go-between in terms of the two software programs. It was not easy or cheap, but it was effective.

Question: Who does the billing for the hospital outpatient department surgery?

Answer: The hospital. We essentially "outsource" the billing to the current hospital department.

Question: Who do staff members at the center report to?

Answer: The staff reports to the outside management company that was hired by the hospital with input from the physician advisory board (PAB). While the director of the department is an employee of the management company, the rest of the staff members are employed by the hospital but dedicated to the outpatient surgery center.

Question: I assume that the existing anesthesia department of the hospital provides anesthesia services.

Answer: In some cases, yes; in some, no. We rely heavily on the input from the PAB on this issue, which can be heated at times.

Question: With some many surgeons involved in for-profit surgery centers, why do they want this model? They get nothing out of it as I can see.

Answer: While the surgeons do not have an equity position, they do have what most surgeons are looking for in a freestanding center: time efficiency. That is one of the primary motivators for the program.

Question: What if the surgeons decide that they want to do their own center? It seems to me that after all this effort, they could still take their cases someplace else.

Answer: Completely true. The goal, however, is to provide them everything they are looking for right in the hospital. For those surgeons who feel they must have their own center, this might not meet their needs.

Question: How can you motivate staff that is hospital-based and needs to be treated like any other hospital staff? You cannot financially motivate one group of employees different than another. This is where your concept falls apart and will not be successful.

Answer: First, we assume that professionals are self motivated. Second, each staff member is hand picked by the management company and the PAB. We are looking for those staff members who are motivated to make it happen. At our most recent facility, we had more than 300 applications, and only about 20% came from the hospital. Motivation is not financially based for most professionals.

(Earnhart & Associates is an ambulatory surgery consulting firm specializing in all aspects of outpatient surgery development and management. Contact Earnhart at 1000 Westbank Drive, Suite 5B, Austin, TX 78746. E-mail: searnhart@earnhart.com. Web: www.earnhart.com.) ■

Minimally invasive gets even less traumatic

Just when one thought that minimally invasive surgery couldn't get any less intrusive, new technologies are discovered that are one step less invasive than the most recent advance.

Such was the case at the recent annual meeting of the Society of Laparoendoscopic Surgeons (SLS) where single-port surgery, articulated laparoscopic instruments, and other novel devices were launched that allow the surgeon and patient the benefits acquired with less traumatic techniques. **(For story on single-port access surgery, see article, below right. For story on new camera holder, see p. 122.)**

One way to convert more open surgeries into laparoscopic surgery is to allow more movement inside the abdomen, which in some surgeries cannot be done with rigid laparoscopic instruments. By adding articulation to the rigid laparoscopic instrument, the surgeon can enjoy better movement and manipulation of organs within the abdomen and perform tasks that cannot be done with rigid instruments.

Several companies have developed such instrumentation, which has enabled surgeons to do more procedures laparoscopically. In a presentation, "Comparison of conventional and second-generation articulating laparoscopic instruments," **Chandru Sundaram**, MD, of Indiana University Medical School in Indianapolis, reported on the differences in conventional vs. articulating laparoscopic instruments when used to perform a series of standardized tasks performed by novices.

She found that except for one cutting task where the articulated instrument group was slower but more accurate, "there were no other statistically significant differences in speed, accuracy, or comfort between the two groups." Sundaram added, "The limitations of conventional laparoscopy have driven the development of articulating instruments. These instruments may help expand the indications for conventional laparoscopy especially in areas where robotic technology is not available or affordable."

Five companies are addressing this opportunity, each with its own strategy. Ethicon Endosurgery in Cincinnati has licensed a line of Harmonic instruments that use ultrasound to simultaneously cut and coagulate. Those instruments have been licensed to Intuitive Surgical in Sunnyvale, CA, for use with the da Vinci robotic system. The robot employs a fully articulating arm called Endowrist, to which the harmonic instruments attach. At this point, Ethicon Endosurgery is not selling a separate, independent line of articulating laparoscopic instruments.

Novare Surgical of Cupertino, CA, and Starion Instruments of Sunnyvale, CA, partnered in a distribution agreement that allows Starion's tissue welding technology to be integrated into Novare's articulated instruments, resulting in a full freedom of movement hand-held laparoscopic instrument and cut-and-seal capability. Novare distributes instruments manufactured by Starion, incorporating the latter's tissue welding technology.

CambridgeEndo of Framingham, MA, manufactures a line of handheld fully articulating laparoscopic instruments that employ RF energy for coagulation, as does Covidien of Norwalk, CT.

The articulated instruments are designed to allow for more surgeries to be performed laparoscopically, to improve the surgeon's dexterity, to allow for better suturing, and all of the associated benefits for the patient: shorter hospital stay, less chance of blood loss, less chance of infection, quicker return to activities — much the same as is true for the robot. The robot has additional advantages such as 3-D visualization, more finesse when suturing, and tremor removal. ■

Pioneers share experience with single-port access

Is single-opening surgery better?

One thing the robot has not yet performed, but articulated handheld laparoscopic instruments have, is single port access (SPA) surgery in which three or four trocars are placed within a single opening in the abdomen, usually the umbilicus.

Results of the first 100 cases were reported at the recent annual meeting of the Society of Laparoendoscopic Surgeons by **Paul Curcillo**, MD, of Drexel University in Philadelphia. In those cases, Curcillo entered primarily the umbilicus with a 1.5-2 cm incision and placed three trocars within that incision to perform a variety of procedures.

Curcillo found that "operative times, results and outcomes were similar for comparable standard multiport procedures." He cautioned the audience that "long-term follow-up is necessary to ensure

that no added complications occur later compared with standard multiple-port techniques." Curcillo suggests at least a two-year follow-up to monitor for hernia formation.

Curcillo also said initially he always used articulating instruments for SPA surgeries but found that for most procedures there is enough "independence of movement" with standard instruments. He now has an articulated instrument ready for each case, but he doesn't open it unless is it needed, which keeps down the costs.

Curcillo said, "All the SPA procedures are the same standard procedures, done in the same way. The only difference is the access. We don't change the game."

Currently, there are 25 surgeons trained to perform SPA surgery, with more signed up to learn from around the world.

Stephanie King, MD, also of Drexel, presented "Single-port access hysterectomy and oophorectomy," which also demonstrated the feasibility of performing surgery through the umbilicus, leaving virtually no scar; unlike laparoscopic surgery where there are three or four stab scars from the various ports used for trocars and cameras.

She compared two patient groups: one that had SPA surgery and the other that underwent standard laparoscopic surgery. She said, "Patient populations and surgical indications were similar in both groups. Operative times were comparable, as was blood loss and length of stay." King concluded that "early results comparing SPA procedures to standard multiport procedures demonstrate comparable results, but allow us to perform the procedures through a single incision concealed within the umbilicus."

Curcillo and King stressed the importance of maintaining the same standard dissection technique and doing the same procedure as always, just reducing the number of abdominal entry points to one. Both surgeons said they think that SPA surgery is a viable, cost-conscious alternative to multiport surgery. SPA surgery allows the surgeon to perform the same procedure, with the same outcome, and at the same cost, but gives the patient only one hidden scar in the bellybutton. ■

Could a camera holder replace an assistant?

Another advance in general laparoscopic surgery that was launched at the recent annual meeting of the Society of Laparoendoscopic Surgeons and received an innovation award was the Free Hand robotic camera holder from Prosurgics of Cupertino, CA.

The camera is securely clamped onto the OR table, while the surgeons wear a controller attached to their surgical caps. The Free Hand device then moves the camera according to the surgeon's head movements, which leaves the surgeons free to move the camera where they want it without assistants doing it for them.

The Free Hand laparoscopic camera holder acts as an extension of the operating surgeon and potentially eliminates the requirement of an assistant. ■

Endoscopy center improves reporting of test results

The Endoscopy Center of Colorado Springs (CO) has won a national award for its improved system of reporting and explaining pathology results to patients. One year after implementing the new reporting system, 100% of patients surveyed received their pathology reports, were informed of the results, and knew their recommended follow-up dates.

The program is a winner of a 2008 Innovations in Quality Improvement Award presented by the Institute for Quality Improvement at the Accreditation Association for Ambulatory Health Care (AAAHC).

The goals of the program are to reduce the number of patients who don't receive their test results or don't follow up for needed tests or procedures, as well as to make pathology reports understandable and meaningful for patients. "Our old reporting system relied on phone calls to patients," said **Monica Clayton**, CGRN, director of the center. "Often, when a message was left, the patient did not return the call, and there was no system to guarantee that all patients received their results and recommendations for follow-up."

Survey shows improvement

Before they implemented the new system, 23% of their patients did not receive their pathology results. Of these, only 40% understood the results, and only 25% remembered when they were due for a follow-up visit. "One year following implementation of our new reporting system, the last survey of

30 patients included in our study found that 100% of them received their pathology reports, were well informed of the results, and knew their recommended follow-up dates," Clayton said.

Mismanaging patient test results "is a subtle but common error in medical care," she said. "When the results of diagnostic tests are allowed to fall through the cracks, harmful delays in treatment or diagnosis can occur."

5 steps to better handling of test results

The new system developed by the endoscopy center includes these steps:

- Cross-referencing a daily pathology list and the specimen log book to ensure that both lists are 100% accurate. The daily pathology list then is used by the office to confirm that all pathology reports have been received.
- Development of a letter that reports pathology results and recommends appropriate follow-up for physicians to fill out and mail to their patients.
- Development of consumer-friendly language for physicians to use when filling out letters to patients.
- Coordination with office staff to ensure that letters are sent to all patients on the pathology list and that a copy of the letter is sent to each patient's referring physician.
- Referencing the specimen log to confirm that the endoscopy center has received the pathology results and patient letter and that all results are placed on the patient's chart. ■

CNE/CME instructions

Physicians and nurses participate in this CNE/CME program by reading the issue, using the references for research, and studying the questions. Participants should select what they believe to be the correct answers, then refer to the answers listed in the answer key to test their knowledge. To clarify confusion on any questions answered incorrectly, consult the source material. After completing this semester's activity with the **December** issue, you must complete the evaluation form provided and return it in the reply envelope to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you. ■

CNE/CME *questions*

- **Identify** clinical, managerial, regulatory, or social issues relating to ambulatory surgery care.
- **Describe** how current issues in ambulatory surgery affect clinical and management practices.
- **Incorporate** practical solutions to ambulatory surgery issues and concerns into daily practices.

17. When deciding on an electronic medical records system, how should the hands-on demonstration be handled, according to Kenny Bozorgi, MD, CASC?
A. Decide on your two top choices, and include as many clinical and nonclinical staff as possible.
B. Have hands-on demonstration of as many systems as you possibly can, and include as many clinical and nonclinical staff as possible.
C. Have hands-on demonstration of as many systems as you possibly can, and include only managers.
D. Decide on your two top choices, and include only managers.

18. According to Melodee Moncrief, BSN, RN, CASC, which of the following statements is true?
A. The entire patient record should be made electronic at one time. Otherwise staff have an excuse not to use the system.
B. EMRs should be implemented in a piecemeal fashion so that problems can be identified and addressed one at a time.

19. According to a study by Mark Rupp, MD, which of the following was a result of the use of alcohol-based hand gels?
A. The rate of hospital-acquired infection dropped by half.
B. The gels caused hand irritation for HCWs.
C. The hand gels had no effect on hand hygiene.
D. The rate of hand hygiene compliance doubled.

20. According to the Institute of Healthcare Improvement, at least how many sizes of gloves should be available and readily accessible at the point of care?
A. Two
B. Three
C. Four
D. Five

Answers: 17. B; 18. A; 19. D; 20. A.

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